SOME RECENT DEVELOPMENTS ON INDICATORS GLOBALLY AND IN THE EU

JANEZ POTOČNIK – CO-CHAIR UNEP INTERNATIONAL RESOURCE PANEL (IRP)

NOVEMBER 18TH 2015
IRP
INTERNATIONAL RESOURCE PANEL
The international resource panel was created in 2007 as a science-policy interface in responding to economic growth, escalating use of natural resources and deteriorating environment and climate change.
IRP, IPCC, IPBES
AND SCIENCE – POLICY INTERFACE

- INTERNATIONAL BY NATURE AND BY DEFINITION
- TRANS-DISCIPLINARY
- POLICY RELEVANT BUT NOT POLICY PRESCRIPTIVE
- GO FOR A BALANCE OF EVIDENCE APPROACH

CREATE A CRITICAL MASS OF SCIENTIFIC KNOWLEDGE - ADVISE THAT POLICY MAKERS CAN NOT IGNORE
FROM INDIVIDUAL RESOURCES TO SYSTEMS THINKING

INDIVIDUAL RESOURCES

- Land and Soils
- Water
- Environmental Impacts
- Metals
- Food
- Metals and Minerals
- Plastics
- Biobased Materials
- Environmental Impacts

SYSTEMS THINKING

- Resource Pricing and Values
- Transition Mechanisms
- Human Behaviour
- Land & Soil
- Food
- Water
- Energy
- Resources
- Materials
- Perspectives

Legend:

- Global Material Flows and Resource Productivity
- Direct and embodied resources in traded goods
- Sustainable Food Systems
- Resource use in cities

Integrated Scenario Analysis
3. Decoupling Natural Resource Use and Env. Impacts from Eco. Growth (2011)
5. Recycling Rates of Metals (2011)
9. City-Level Decoupling and the Governance of Infrastructure Transitions (2013)
## ON-GOING RESEARCH AND UPCOMING REPORTS

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20th CENTURY
THE GREAT ACCELERATION

• GROWTH OF POPULATION BY A FACTOR 3.7
• ANNUAL EXTRACTION OF CONSTRUCTION MATERIALS GREW BY A FACTOR OF 34, ORES AND MINERALS BY A FACTOR OF 27, FOSSIL FUELS BY A FACTOR OF 12, BIOMASS BY A FACTOR OF 3.6
• TOTAL MATERIAL EXTRACTION GREW BY A FACTOR OF 8
• GHG EMISSIONS GREW BY A FACTOR OF 13
MAIN PROBLEM (IN ONE SLIDE)
DEVELOPMENT TRAJECTORY

Ecological footprint (hectares per person per year)

Source: Global Footprint Network, 2012; UNDP, 2014a
SUSTAINABLE, LOW-CARBON, CIRCULAR, GREEN, RESOURCE EFFICIENT, DECOUPLING OR ...

• WHAT WE ACTUALLY TALK ABOUT
• SUSTAINABILITY – ECONOMIC, SOCIAL, ENVIRONMENTAL …
• ECONOMY IS IN DENIAL OF PHYSICAL LAWS
• POPULATION GROWTH (2050 – 9.7 BIL)
• PER CAPITA CONSUMPTION GROWTH
• LIMITED RESOURCES - FRESH WATER, OCEANS, LAND AND SOIL, CLEAN AIR, RAW MATERIALS, BIODIVERSITY, ECOSYSTEMS, FUEL …
• TODAY 60% OF ECOSYSTEMS DEGRADED OR USED UNSUSTAINABLY
ECONOMIC ARGUMENTS FOR CHANGE (EU)

• RESOURCE INTENSIVE MODEL OF PRODUCTION AND LOCK-INS

• CHANGE OF RESOURCE PRICE TRENDS AND INCREASED PRICE VOLATILITY
A HUNDRED YEARS OF DECLINE OF RESOURCE PRICES

Figure 2.4. Composite resource price index (at constant prices, 1900–2000)

Source: Wagner et al., 2002
RESOURCE PRICES ON THE RISE DESPITE RECENT TRENDS

Figure 2.5. Commodity price indices

Price index (real year 2000 US$) 2000–100

- Food
- Raw materials
- Energy
- Metals and minerals (including iron ore)

ECONOMIC ARGUMENTS FOR CHANGE (EU)

• RESOURCE INTENSIVE MODEL OF PRODUCTION AND LOCK-INS

• CHANGE OF RESOURCE PRICE TRENDS AND INCREASED PRICE VOLATILITY

• COST STRUCTURE OF MANUFACTURING SECTOR
COST STRUCTURE IN THE MANUFACTURING INDUSTRY 2011
VDI GERMAN AGENCY FOR MATERIAL EFFICIENCY

- Material: 47%
- Labour: 18%
- Trade goods: 11%
- Others (Depreciation, Lease, etc): 16%
- Interests: 1%
- Taxes other than on income: 3%
- Contract work: 2%
- Energy: 2%
- Trade goods: 11%
- Contract work: 2%
- Energy: 2%
- Material: 47%
SHARE OF COSTS IN THE MANUFACTURING SECTOR 1993-2011
VDI GERMAN AGENCY FOR MATERIAL EFFICIENCY

% SHARE OF TOTAL COST

- Material Costs
- Labour Costs
- Energy Costs
ECONOMIC ARGUMENTS FOR CHANGE (EU)

• RESOURCE INTENSIVE MODEL OF PRODUCTION AND LOCK-INS

• CHANGE OF RESOURCE PRICE TRENDS AND INCREASED PRICE VOLATILITY

• COST STRUCTURE OF MANUFACTURING SECTOR

• IMPORT DEPENDENCY
PERSISTENCE AND CHANGES IN NET IMPORTING AND NET EXPORTING COUNTRIES, 1962-2010

Source: (Dittrich et al., 2012)
FOR 54 SCARCE AND ECONOMICALLY IMPORTANT RAW MATERIALS, EUROPE IN ITS ENTIRETY DEPENDS 90% ON RAW MATERIALS IMPORTED FROM OUTSIDE EUROPE

(EUROPEAN COMMISSION, 2014)
EU APPROACH
BARROSO(2) COMMISSION
• GETING ALL STAKEHOLDERS ON BOARD: RESOURCE EFFICIENCY ROUNDTABLE

• PROGRAMME FOR CHANGE: RESORCE EFFICIENCY ROADMAP

• INTEGRATION WITH OTHER POLICIES: CIRCULAR ECONOMY PACKAGE

• INTEGRATION INTO ECONOMIC GOVERNENCE MODEL: PREPARING INPUTS FOR THE SEMESTER PROCES – SUSTAINABLE ECONOMIC POLICY, REORGANISATION OF DG ENVI, REGULAR POINT ON THE ENVI COUNCIL AGENDA

• ACTIVELY CONTRIBUTING INPUTS FOR THE GLOBAL TRANSFORMATIONAL AGENDA
FROM DMC TO TMC

HEADLINE TARGET
GDP/RAW MATERIAL CONSUMPTION

DASHBOARD

INDICATOR LAND
INDICATOR WATER
INDICATOR GHG
INDICATOR MATERIALS

ANNUAL RESOURCE EFFICIENCY SCOREBOARD
(EUROSTAT, SINCE 2013)
PRINCIPLE 1
Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows.

PRINCIPLE 2
Optimise resource yields by circulating products, components and materials in use at the highest utility at all times in both technical and biological cycles.

PRINCIPLE 3
Foster system effectiveness by revealing and designing out negative externalities.

Source: Ellen MacArthur Foundation; McKinsey Center for Business and Environment; Stiftungsfonds Für Umweltökonomie und Nachhaltigkeit (SUN); Drawing from Braungart & McDonough Cradle to Cradle (C2C)
SOME INTERNATIONAL EXAMPLES
• SYSTEMIC TRANSFORMATION – NEW GLOBAL AGREEMENT BASED ON “NEW NORMAL” POVERTY ERADICATION AND SUSTAINABILITY

• RIO+20: AGREEMENT ON SDG’s PROCESS
• FROM MDG’s TO SDG’s AND POST-2015 AGENDA
• ADOPTED: SEPTEMBER 25TH 2015
• 17 GOALS AND 169 TARGETS + INDICATORS
DECOUPLING
IRP PROMOTED CONCEPT
TWO ASPECTS OF DECOUPLING

**RESOURCE DECOUPLING** happens when resource productivity is improved at a rate that is faster than the economic growth rate (increased economic value and a greater level of well-being can be created by using the same amount of, or less, resources).

**IMPACT DECOUPLING** refers to achieving more well-being and (if necessary) economic growth with fewer negative environmental impacts; or indeed, even restoration of eco-system services.
TWO ASPECTS TO DECOUPLING GROWTH IN RESOURCE USE AND ENVIRONMENTAL IMPACTS

- Human well-being
- Economic activity (GDP)
- Resource use

Resource decoupling
Impact decoupling

Time
DECOUPLING 1

DECOUPLING REPORTS SHOW THAT ONLY RELATIVE DECOUPLING IS HAPPENING. BUT THE GLOBAL RESOURCE AND CLIMATE DILEMMA REQUESTS ABSOLUTE DECOUPLING.

DECOUPLING 2
THE ECOLOGICAL FOOTPRINT
Graph showing Ecological Footprint from 1960 to 2007 and scenarios for 2007-2050.

- **1960-2007**
  - Ecological Footprint

- **2007-2050, Scenarios**
  - Moderate business as usual
  - Rapid reduction

**y-axis:** number of planet earths, **x-axis:** years
* TO CONCLUDE ...
ECONOMIC TRANSITION IS NECESSARY AND UNAVOIDABLE SCIENCE

WE HAVE TO FIX A BROKEN COMPASS
(PAVAN SUKHDEV)
SOME OBSTACLES...

HUMAN BEHAVIOUR - WHY WE ACT AT HOME IN A DIFFERENT WAY THAN WE DO IN OUR PUBLIC LIFE?

LACK OF LONG TERM CONSISTENCY – HOW TO STRENGTHEN LONG TERM STRATEGIC THINKING AND POLICY MAKING AND REPLACE PREVAILING SHORT TERM LOGIC?

PROTECTING STATUS QUO - HOW TO BREAK LOCK-INS AND THE LOGIC OF DEFENDING THE LOWEST COMMON DENOMINATOR APPROACH?

GOVERNANCE AND LACK OF IMPLEMENTATION: HOW TO TRANSLATE COMMITMENTS FROM POLITICAL STATEMENTS TO A DAILY REALITY?

SILOS MENTALITY - HOW TO MAKE PEOPLE UNDERSTAND THAT COOPERATION IS THE BEST WAY FOR ALL OF THEM TO WIN?
IT IS NOT ABOUT LOWERING QUALITY OF LIFE – IT IS ABOUT MEETING OUR NEEDS IN A DIFFERENT WAY

STRATEGIC PRIORITY OF THE GOVERNMENT (NOT ONLY ENVIRONMENT) DEFINED IN THE STRATEGIC DOCUMENTS OF THE GOVERNEMENT, SUPPORTED BY INDICATORS, MONITORING, REPORTING AND LINKED TO THE CORE ECONOMIC POLICY DECISIONS …

ALL POLICIES SHOULD BE SYSTEMATICALLY ADJUSTED – BEYOND GDP, NATURAL CAPITAL ACCOUNTING, CORPORATE SUSTAINABILITY REPORTING, TAX POLICY, STATE AID, PUBLIC PROCUREMENT, PRODUCT DESIGN, USE OF BANKING POTENTIAL, R&D AND INNOVATION, INVESTMENTS IN INFRASTRUCTURE, EDUCATION, CONSUMERS AWARENESS, NEW BUSINESS MODELS, SUPPORT TO SMS, ETC.)

ACTIVE DIALOGUE WITH ALL STAKEHOLDERS INTERESTED IN PROTECTING STATUS QUO – TRANSITION IS ONLY POSSIBLE IF WE HAVE ACTIVE DIALOGUE WITH THOSE LOOSING IN THE PROCESS OF TRANSITION
PROTECTING ENVIRONMENT AND HUMAN HEALTH WILL NOT BE POSSIBLE WITHOUT FUNDAMENTALLY CHANGING OUR ECONOMIC BEHAVIOUR - WITHOUT GOING INTO THE ROOTS OF ECONOMIC THEORY

ECONOMIC DEVELOPMENT WILL NOT BE POSSIBLE WITHOUT RESPECTING THE LIMITS OF THE PLANET
AND WE NEED TO MEASURE THAT
THANK YOU

www.unep.org/resoucepanel